BRAC Program Management Office East
Philadelphia, Pennsylvania

Final
Aqueous Investigation-Derived Waste Management Work Plan

Basewide

Former Naval Air Station Joint Reserve Base Willow Grove
Horsham Township, Pennsylvania

July 2021

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FINAL
AQUEOUS INVESTIGATION-DERIVED WASTE MANAGEMENT WORK PLAN

BASEWIDE

FORMER NAVAL AIR STATION JOINT RESERVE BASE WILLOW GROVE
HORSHAM TOWNSHIP, PENNSYLVANIA

COMPREHENSIVE LONG-TERM
ENVIRONMENTAL ACTION NAVY (CLEAN) CONTRACT

Submitted to:
Department of the Navy
Base Realignment and Closure Program Management Office East
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Acronyms and Abbreviations

AFFF	Aqueous film-forming foam
AST	Aboveground storage tank
BRAC	Base Realignment and Closure
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CLEAN	Comprehensive Long-Term Environmental Action Navy
CTO	Contract Task Order
DoD	Department of Defense
EPA	U.S. Environmental Protection Agency
HLRA	Horsham Land Redevelopment Authority
IDW	Investigation-derived waste
JRB	Joint Reserve Base
NAS	Naval Air Station
NPDES	National Pollutant Discharge Elimination System
NPL	National Priorities List
O&M	Operation & Maintenance
PADEP	Pennsylvania Department of Environmental Protection
PFAS	Per- and polyfluoroalkyl substances
PFOA	Perfluorooctanoic acid
PFOS	Perfluorooctanesulfonic acid
PM	Project Manager
RI	Remedial Investigation
SWP	Safe work practice
TCRA	Time Critical Removal Action

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1.0 Introduction

This Work Plan for Aqueous Investigation-Derived Waste (IDW) Management was prepared for the former Naval Air Station (NAS) Joint Reserve Base (JRB) Willow Grove located in Horsham, Pennsylvania under the United States Navy Comprehensive Long-Term Environmental Action Navy (CLEAN), Contract Number N6247016D9008, Contract Task Order (CTO) WE04. This work plan addresses the management of aqueous IDW impacted by (or believed to be impacted by) per- and polyfluoroalkyl substances (PFAS) associated with the ongoing and planned investigation and interim remedial action activities.

This work plan provides information about the following aqueous IDW-related procedures:

- Managing and recordkeeping of aqueous, PFAS-impacted IDW.
- Treating aqueous IDW.
- Managing accidental spills, leaks, and releases of aqueous IDW.

A copy of this work plan will be maintained on-site in the treatment system container and at the Tetra Tech office in King of Prussia, Pennsylvania. This work plan will be amended as necessary. The revised work plan will be distributed to personnel associated with Aqueous IDW management at the former NAS JRB Willow Grove.

1.1 Site Background

The former NAS JRB Willow Grove is located in Horsham Township in Montgomery County, Pennsylvania (Figure 1-1). The former NAS JRB Willow Grove occupied approximately 900 acres of the 1,100 acres the Department of Defense (DoD) maintained at the Air Station. When in operation, the primary mission of former NAS JRB Willow Grove was to provide support for operations involving aviation training activities and to train Navy reservists. The former NAS JRB Willow Grove supported other DoD tenants, such as the U.S. Marine Reserve and the U.S. Army Reserve, and shared facilities and services with the U.S. Air Force Reserve.

Former NAS JRB Willow Grove was placed on the National Priorities List (NPL) in September 1995. The NPL identifies facilities that appear to warrant remedial action financed under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), also known as the federal Superfund program. The former NAS JRB Willow Grove was selected in 2005 by the Base Realignment and Closure (BRAC) Commission for closure and was officially disestablished on March 30, 2011. The Base continued to provide services and facilities on a limited basis until

September 2011. At that time, it was transferred to the BRAC Program Management Office. It entered caretaker status, a non-operational condition in which the facility undergoes limited preservation status to protect it against fire, vandalism/theft, and damage from the elements. The Horsham Land Redevelopment Authority (HLRA) coordinates decisions regarding the future use of the land for former NAS JRB Willow Grove.

In 2011, PFAS were detected in existing Site 5 Training Area monitoring wells at concentrations greater than the U.S. Environmental Protection Agency (EPA) 2009 provisional health advisory levels. In 2014, perfluorooctanoic acid (PFOA) and perfluorooctanesulfonic acid (PFOS) were detected at concentrations greater than the EPA 2009 provisional health advisory levels in on-base and off-base potable supply wells. In 2014, a Time Critical Removal Action (TCRA) was initiated to provide alternate water supplies to affected residents. At the same time, a Time Critical Removal Action was also initiated to provide treatment at Horsham Water and Sewer Authority supply wells that exhibited PFOA or PFOS concentrations equal to or greater than provisional health advisory levels and to extend public water to locations with private wells that exhibited PFOA and PFOS concentrations equal to or greater than the provisional health advisory levels.

The Navy conducted a Remedial Investigation (RI) for PFAS from 2014 to 2019 (Resolution, 2019), herein referred to as the Phase I RI. An evaluation of potential site source areas was conducted in 2015. Primary and secondary potential source areas were identified based on the potential presence of PFAS-containing products to be used or stored at each potential source area. The potential source areas were investigated and evaluated through the performance of additional fieldwork conducted between 2015 and 2018, which included monitoring well installation, groundwater, surface water, soil, and sediment sampling and analysis, and implementation of a TCRA excavation in the vicinity of Buildings 175, 183 and 608 to remove soils impacted by PFOS and PFOA.

In addition to the work conducted during the Phase I RI, multiple activities have been performed or are ongoing to further evaluate groundwater related to potential PFAS source areas at the former NAS JRB Willow Grove, including the implementation of two PFAS groundwater treatment pilot studies. The first pilot study at Building 680 began in March 2020 and is ongoing. A second pilot test at Site 5 is expected to begin in the second quarter of 2021.

The results of the pilot studies Building 680 and Site 5 will aid in the design of the full-scale PFAS groundwater treatment system, which is currently under development. In advance of the final design of the full-scale pilot test system, additional open-borehole bedrock well locations were installed in the areas surrounding the Building 680 and

Site 5 pilot studies, which are intended for use as extraction wells in the full-scale PFAS groundwater treatment system design.

In April and May 2020, 12 open-borehole bedrock wells were installed downgradient, upgradient, and side gradient of the Building 680 PFAS pilot study system (Tetra Tech, 2020a). The water generated from extraction well installation near Building 680 was stored in frac tanks at the locations shown on Figure 1-2. In October and November 2020, 15 open-borehole bedrock wells were installed in the area surrounding the proposed Site 5 PFAS pilot study system (Tetra Tech, 2020b). Two locations, F1S and F1I, will be used for extraction during the Site 5 PFAS pilot study. The water generated from extraction well installation at Site 5 was stored in frac tanks at the locations shown on Figure 1-3.

Aqueous IDW, including purge water from well installation, well development activities, and decontamination, was generated during well installation activities at Building 680 and Site 5 and containerized in nominal 20,000-gallon, closed-top frac tanks. Approximately 180,000 gallons of aqueous IDW was generated during open-borehole bedrock well installation activities, including 50,000 gallons of aqueous IDW during Building 680 well installation activities and 130,000 gallons of aqueous IDW during Site 5 well installation activities.

In addition to aqueous IDW generated during well installation activities, purge water generated during on-base groundwater sampling activities conducted since May 2020 has been containerized in these frac tanks. These activities include groundwater monitoring performed in the Northern Ponding Area in May 2020 (Tetra Tech, 2020c), sampling of open-borehole bedrock wells installed near Building 680 in August 2020, and monthly groundwater sampling activities performed as part of the ongoing Building 680 pilot study (Tetra Tech, 2019).

Lastly, the basement of Building 80, located south of the Building 680 pilot study, is currently flooded due to suspecting infiltration of shallow groundwater into the basement, rainwater infiltrating into utility conduits entering the basement, or a combination of both. Aqueous film-forming foam (AFFF) containing PFAS was used in the building's fire suppression system. Four 1,500-gallon AFFF aboveground storage tanks (ASTs) were located in the basement of the administrative wing on the northwestern side of the building. The AFFF systems present at NASJRB Willow Grove were decommissioned in 2011. During a site visit conducted on September 16, 2020, it was confirmed that the tanks were stenciled with "Closed in Place", all piping was disconnected from the aboveground tanks, and the piping entrances were blind flanged. All tanks were reportedly cleaned; although, no evidence of cleaning means and methods were identified. Phase 1 soil borings confirmed the presence of PFAS in soils

outside of the building (Resolution, 2019). A sample of the water from the basement was collected and the water was found to contain PFOS at a concentration of approximately 40,000 nanograms per liter. It is estimated that the basement of Building 80 contains approximately 275,000 gallons of water. To complete planned Phase II soil investigation activities, this basement will need to be dewatered.

1.2 Aqueous IDW Treatment System

It is the Navy's intention to treat all aqueous IDW using an onsite IDW treatment system. This system will also be used to treat the water from the flooded basement of Building 80 as well as any aqueous IDW generated as part of the ongoing and planned investigation and remediation activities.

An aqueous IDW treatment system will be mobilized to former NAS JRB Willow Grove. and set up in the Building 680 area until the full-scale PFAS groundwater treatment system is operational.

A request will be made to the Pennsylvania Department of Environmental Protection (PADEP) for effluent from the aqueous IDW treatment system to be discharged under the existing PADEP National Pollutant Discharge Elimination System (NPDES) permit equivalency issued for the Building 680 pilot study. The NPDES permit equivalency for the Building 680 pilot study allows for treated groundwater discharge to the on-base stormwater conveyance system that leads to Outfall Number 8 in the Northern Ponded Area near the northwestern property boundary (Figure 1-4).

2.0 Aqueous IDW Management

Aqueous IDW shall be managed within the former NAS JRB Willow Grove under the supervision of Tetra Tech and/or their designees. This section of the Aqueous IDW Management Plan covers procedures and requirements related to routine handling and recordkeeping of aqueous IDW.

2.1 Aqueous IDW Handling

Aqueous IDW is anticipated to be handled differently based on the volume of aqueous IDW generated during different activities. Well installation and development activities will generate a higher volume of aqueous IDW compared to well sampling activities.

Aqueous IDW shall be handled by Tetra Tech and/or Tetra Tech subcontractors safely and effectively in accordance with Tetra Tech Safe Work Practices (SWP) 5-14 – Spill and Discharge Control Practices to minimize the possibility of accidental spills and leaks. Aqueous IDW handling procedures should be conducted based on the best judgment of the handlers; and when necessary, after consultation with the Tetra Tech Project Manager (PM) to determine the best possible action(s).

2.1.1 Well Installation and Development Aqueous IDW

Aqueous IDW generated during well installation and development activities will be pumped directly into frac tanks located near the wells for temporary storage. The aqueous IDW will then be transferred to vacuum tanker trucks to transport the water to the frac tanks associated with the aqueous IDW treatment system.

The following are the minimum standards for aqueous IDW handling; however, these minimum standards may not be sufficient to prevent potential spills and leaks in all cases, and additional actions may be necessary to prevent accidental releases:

- Aqueous IDW shall be vacuumed or pumped from the frac tanks into tanker trucks or trailers.
- Transfer hoses shall be puncture free and secured to equipment (i.e., pumps, trucks) using cam-lock fittings to create a leak-proof seal.
- The tanker truck driver/operator shall be present at all times aqueous IDW is being transferred to and from the tanker truck to monitor levels in the tank(s) and to discontinue transfer in the event of a release or emergency.
- The tanker truck driver/operator shall discontinue transfer of aqueous IDW to the tanker truck prior to overfilling the tank.

- Upon disconnecting the transfer hose from equipment, the hose end shall be placed in a container large enough to contain water that may be in the hose to prevent aqueous IDW from gravity draining from the hoses to the ground.
- Upon completion of daily aqueous IDW transfer, the transfer hoses shall be drained, rolled up and placed in a secure area.

2.1.2 Well Sampling Aqueous IDW

Aqueous IDW generated during well sampling will be collected in 5-gallon buckets at each of the well locations and transported to the aqueous IDW treatment system frac tanks in vehicles.

The following are the minimum standards for aqueous IDW handling; however, these minimum standards may not be sufficient to prevent potential spills and leaks in all cases, and additional actions may be necessary to prevent accidental releases:

- During sampling activities, aqueous IDW shall be pumped into 5-gallon buckets in good condition and free of defects.
- Containers with aqueous IDW shall remain closed with sealed lids at all times, except in the event that aqueous IDW is being added to the containers or dumped into the aqueous IDW treatment system frac tanks.
- Aqueous IDW shall be carefully poured from the containers through the open tops of the IDW treatment system frac tanks.

2.2 Aqueous IDW Record Keeping

IDW records are maintained by the Tetra Tech PM for all IDW generated at the former NAS JRB Willow Grove. Record keeping is initiated in the field by the Field Operations Leader or their designee. The following information is required to be recorded in the IDW logbook and emailed to the Tetra Tech PM immediately following IDW generation:

- Date of IDW generation.
- Source of IDW (site name and well identification).
- Volume of IDW generated.

Only aqueous IDW generated from wells and sites primarily contaminated with PFAS should be treated by the system. Other potential contaminants in the development and purge water IDW may not be adequately removed by the treatment system prior to discharge.

After treatment of accumulated aqueous IDW, the following information is required to be recorded in the IDW logbook and emailed to the Tetra Tech PM:

- Date and time of IDW treatment.
- Starting and ending readings of the aqueous IDW treatment system flowmeter.
- Instantaneous discharge rate of aqueous IDW treatment from the IDW treatment system flowmeter.

The records described above will be stored electronically by the Tetra Tech PM. An annual report summarizing the IDW treatment activities will be prepared by Tetra Tech and submitted to the Navy.

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3.0 Aqueous IDW Treatment

Accumulated aqueous IDW will be treated using the aqueous IDW treatment system. The system, housed in a heated and insulated 20-foot long shipping container, is comprised of the following equipment piped in series:

- Two #2 sized bag filter housings with 25-micron bag filters for solids removal.
- Two vessels each filled with 1,000-pounds Calgon Filtrasorb® 400 liquid granular activated carbon for organics removal.
- Two vessels each filled with 10-cubic feet of Purolite® Purofine® PFA694A anionic ion exchange resin for PFAS removal.

The process flow diagram for the aqueous IDW treatment system is shown on Figure 3-1.

The aqueous IDW treatment system will be operated by Tetra Tech personnel who are trained to operate the system and familiar with the procedures outlined in the Operation & Maintenance (O&M) Plan that will be provided by the treatment system contractor. Copies of the O&M Plan will be kept in the treatment system shipping container and at the local Tetra Tech office.

Treatment of aqueous IDW is to be completed continuously until all aqueous IDW that is currently stored at NAS JRB Willow Grove is treated. As more aqueous IDW is generated from future activities, the IDW will be processed through the treatment system in batches. Only aqueous IDW generated from PFAS contaminated areas should be treated with the aqueous IDW treatment system.

The following procedure, in conjunction with any more detailed start-up procedures that may be provided in the O&M Plan, will be followed to treat accumulated aqueous IDW:

- Energize the aqueous IDW treatment system (if it was de-energized following its last use) by turning the system disconnect switch located on the circuit breaker panel outside the shipping container to the ON position.
- Confirm that the discharge pipe from the aqueous IDW treatment system to the discharge point is intact and liquid in the pipe is not frozen.
- Place the submersible pump(s) in the aqueous IDW treatment system frac tank(s) and secure them to the top of the frac tank using the safety cable or rope. If sediment is present or anticipated to the present in the frac tank(s), the submersible pump should be raised a minimum of 1 foot above the bottom of the

frac tank to prevent transporting sediment to the aqueous IDW treatment system. Sediment levels should be monitored in the frac tanks throughout operation of the aqueous IDW treatment system to determine if the submersible pump(s) should be raised or lowered.

- Confirm that the frac tank transfer hose is connected to the submersible pump(s) and the aqueous IDW treatment system influent pipe, that the pipe is intact, and liquid in the pipe is not frozen.
- If the discharge pipe and transfer hose heat trace is not on and freezing conditions are anticipated, plug the heat trace in 24 hours in advance of IDW treatment.
- Start the aqueous IDW treatment system by turning the system start switch on the control panel to the AUTO position.
- Plug the electrical cord for the transfer pump into the electrical socket to start transfer of water from the frac tank to the aqueous IDW treatment system.
- Adjust the influent valve to throttle to flow through the aqueous IDW treatment system to no greater than 20 gallons per minute.
- Monitor the levels of aqueous IDW in the treatment system frac tanks and operate the submersible pumps in each frac tank to process the aqueous IDW.
- Complete the necessary recordkeeping as outlined in Section 2.2.

Upon completion of aqueous IDW treatment, the following shutdown procedure should be completed:

- Unplug the frac tank submersible pump from the electrical outlet and let water in the transfer hose(s) drain back to the frac tank and to the treatment system.
- Turn the system start switch on the control panel to the OFF position after all aqueous IDW has been treated, and the transfer hose connected to the influent side of the system is empty.
- Place a clean 55-gallon drum near the transfer hose connection to the aqueous IDW treatment system to capture any aqueous IDW that may be remaining in the transfer hose upon disconnection.
- Disconnect the transfer hose and place the end in the 55-gallon drum to capture aqueous IDW that remains in the hose.

- Coil up the transfer hose and ensure that only minimal water is left in the hose.
- De-energize the treatment system by switching the disconnect switch on the circuit breaker panel to the OFF position. (This will only be done if heat is not needed to prevent freezing; otherwise, leave the treatment system power energized to heat the treatment system container.)

The effectiveness of the aqueous IDW treatment system at removing PFAS and other potential contaminants will be assessed by analyzing samples collected from samples ports at pre-, mid-, and post-carbon vessel and pre-, mid-, and post-ion exchange vessels locations. Based on an evaluation of the data, media changeouts may be necessary. The spent media will be removed and replaced with the same, or approved equivalent, media and the vessels will be brought back online according to the recommendations of the media manufacturers.

Spent media and sediment will be containerized, characterized, and disposed/recycled according to appropriate federal and state regulations and Navy guidance.

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4.0 Managing Accidental Releases

This section addresses emergency procedures for managing the accidental spill or release of aqueous IDW from the IDW treatment system. The hazards associated with aqueous IDW are relatively low; therefore, this Plan only addresses managing spill incidents (which are the most likely type of emergency that could occur), and no specific arrangements have been made with the local hospital or local emergency response teams.

In the event of a spill incident that cannot be managed directly by the IDW handler or treatment system operator because of its size or scope, the Tetra Tech PM will be contacted to procure a qualified spill cleanup contractor. The Tetra Tech PM will then seek immediate funding approval from the Navy prior to implementing an emergency response.

4.1 Spills, Leaks, and Releases

The IDW handlers and treatment system operators shall handle all aqueous IDW spills and leaks in a safe and effective manner. A spill kit is located within the IDW storage area for the purpose of addressing spills and leaks; however, workers shall use any resources necessary to address spills and leaks in a timely manner. Upon discovery of a spill or leak, the IDW handler or treatment system operator shall immediately notify the Tetra Tech PM to convey the nature of the spill or leak and determine the best course of action. The following guidance is provided regarding spills and leaks:

- For leaks or spills from an aqueous IDW container, use the sorbent material in the spill kit to capture the spilled material and transfer the remaining IDW into a new container, or “overpack” the leaking container into a larger container.
- For leaks onto the soil, shovel the top 2 to 6 inches of wet soil into a new drum and label the drum accordingly. If impacted soils remain, contact the Tetra Tech PM, who will make arrangements for the services of a cleanup contractor.
- For a spill that cannot be immediately cleaned up by the IDW handler or treatment system operator because of its size or scope, or a spill that enters the environment (and thus becomes a release), follow the Emergency Procedures in Section 4.4 of this Plan.
- Handle, containerize, and dispose of spill and leak cleanup materials as solid IDW. Solid IDW will be disposed per state and federal regulations and under the supervision of Tetra Tech and/or their designees.

4.2 Emergency Equipment

Emergency equipment is maintained within the aqueous IDW treatment system area to address possible emergencies. Since the aqueous IDW related to activities at the former NAS JRB Willow Grove is of relatively low risk, only limited emergency equipment is required. There is no phone system at the IDW treatment system container; therefore, authorized personnel treating aqueous IDW shall carry a working cell phone. The following emergency equipment is maintained within the IDW storage area.

- "ABC" fire extinguisher to address small fires.
- Spill control kit to address small spills and leaks which contains the following items:
    - Two overpack drums
    - Four 48-inch absorbent socks
    - One 10-inch absorbent sock
    - Ten absorbent mat pads
    - Two absorbent pillows
    - Five disposal bags with ties
    - Container labels
- Flat scoop-type shovel for shoveling absorbent material and solids off paved areas.
- Spade shovel for shoveling absorbent material and soil from unpaved areas where a spill has occurred.

4.3 Duties of the Project Manager

The Tetra Tech PM has the responsibility for coordinating all emergency response measures. The PM is familiar with all aspects of the contingency plan, operations, and activities at former NAS JRB Willow Grove, the location and characteristics of IDW, the location of records, and the layout of former NAS JRB Willow Grove. The PM has the authority to commit the resources necessary to carry out the procedures documented below. The potential actions to be taken by the PM are described in Section 4.4.

4.4 Emergency Procedures

At the time of an imminent or actual emergency situation, the PM (or their designee) shall initiate and direct the following emergency procedure:

- Notify all personnel present within 100 feet of the aqueous IDW treatment system.
- Notify the appropriate Navy Remedial Project Manager (RPM) and Caretakers.
- Notify appropriate state and/or local agencies for emergency response, if necessary.
- Evaluate the character, source, amount, and areal extent of any significant release of materials. This evaluation should be performed immediately by observation, review of facility records, and (if necessary) by chemical analysis.
- Assess possible hazards to human health or the environment that may result from the release. This assessment must consider both direct and indirect effects of the release (e.g., the effects of any surface water run-off from spills).
- Take all reasonable measures necessary to ensure that releases do not recur. Reasonable measures shall include (where applicable): stopping processes and operations, collecting and containing released aqueous IDW, and removing or isolating containers.
- Monitor for leaks from other containers or other equipment.
- Provide for treating, storing, or disposing of recovered aqueous IDW, contaminated soil or surface water, or any other material that results from a release of aqueous IDW immediately after the emergency.
- Coordinate procurement of appropriate subcontractors necessary for cleaning up, handling, packaging, transporting, and disposing of collected waste resulting from the emergency.
- Generated and collected waste resulting from the emergency shall be treated, stored, or disposed of as necessary until cleanup procedures are completed; and all emergency equipment is cleaned and fit for its intended use before aqueous IDW treatment operations are resumed.
- Note the time, date, and details of any incident that requires implementing the emergency procedures. Within 15 days after the incident, Tetra Tech shall submit

a written report on the incident to the Navy and EPA Regional Administrator. The report must include:

- Name, address, and telephone number of the owner or operator.
- Name, address, and telephone number of the facility.
- Date, time, and type of incident.
- Name and quantity of material(s) involved.
- The extent of injuries, if any.
- An assessment of actual or potential hazards to human health or the environment.
- Estimated quantity and disposition of recovered material that resulted from the incident.

In the event that the PM determines that a release that could threaten human health or the environment and that evacuation of local areas may be advisable, the PM shall immediately notify appropriate local authorities and help them make this determination. The PM Notification shall include the following items:

- Name and telephone number of reporting staff.
- Name and address of facility.
- Time and type of incident.
- Name and quantity of material(s) involved, to the extent known.
- The extent of injuries, if any.
- The possible hazards to human health or the environment.

5.0 References

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FIGURES

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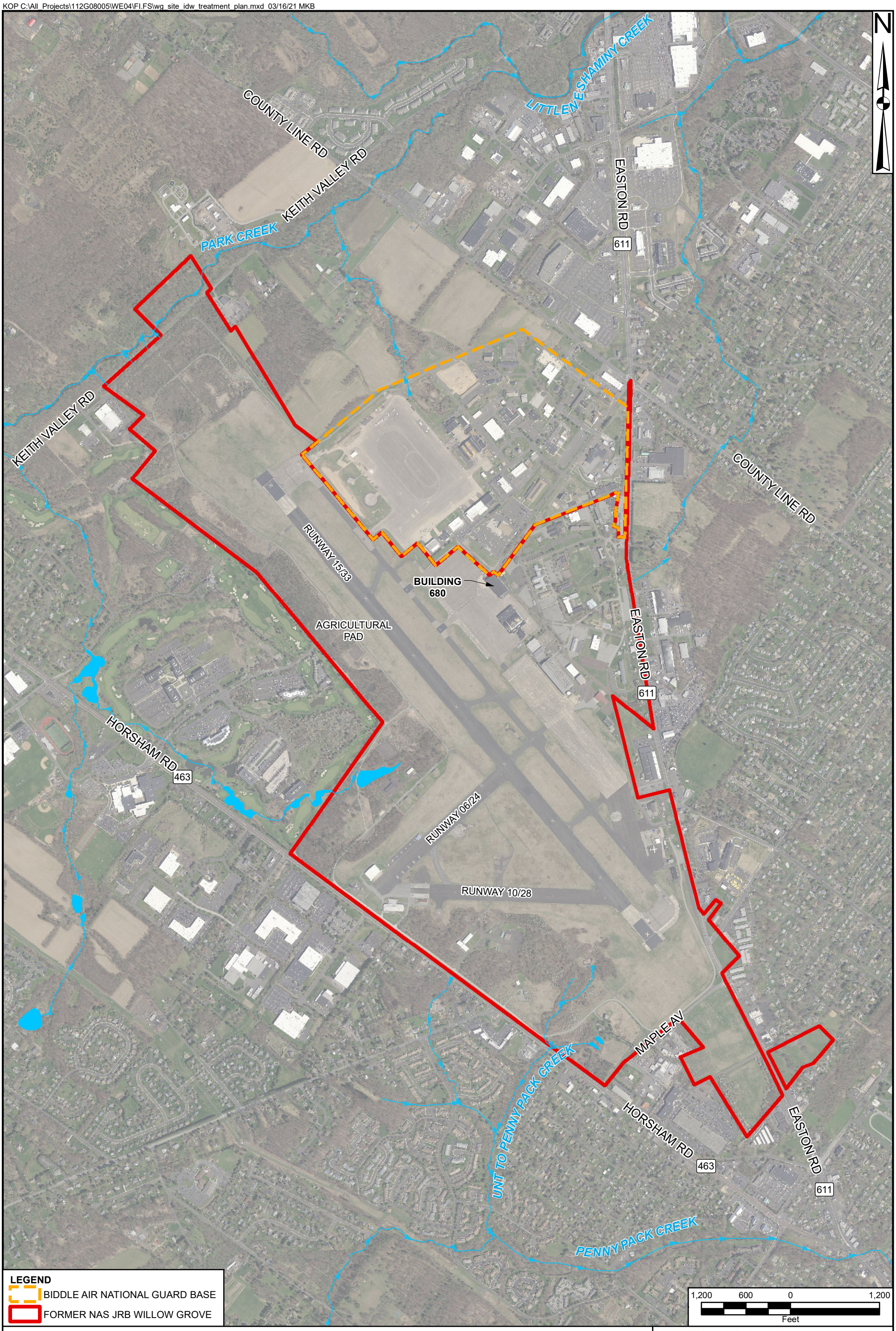

SITE LOCATION MAP
AQUEOUS IDW MANAGEMENT PLAN
FORMER NAS JRB WILLOW GROVE
HORSHAM TOWNSHIP, PENNSYLVANIA

NAVFAC
Naval Facilities Engineering Systems Command

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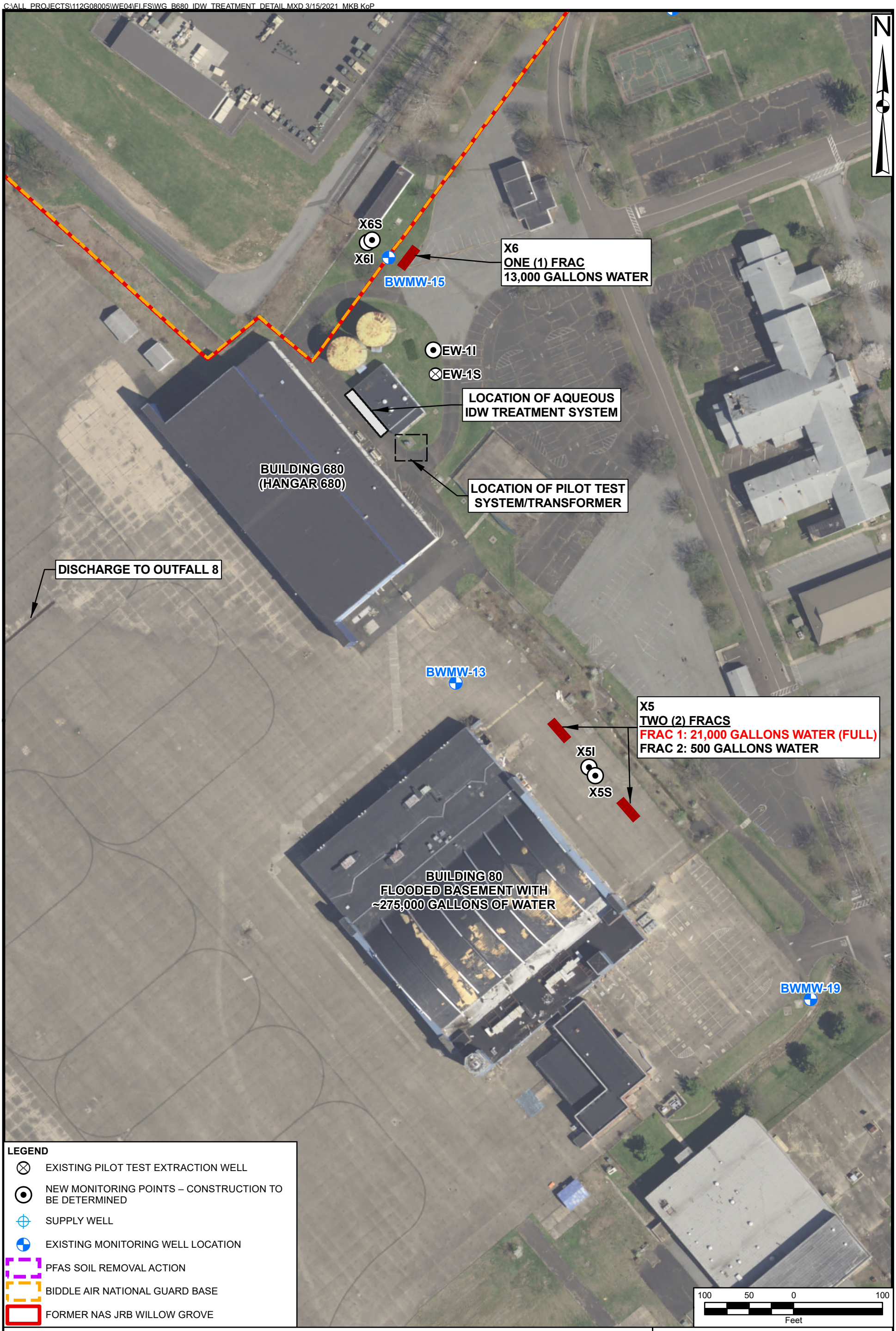

HANGAR 680 AREA FRAC TANK LOCATIONS
AQUEOUS IDW WORK PLAN
FORMER NAS JRB WILLOW GROVE HORSHAM
TOWNSHIP, PENNSYLVANIA

NAVFAC
Naval Facilities Engineering Systems Command

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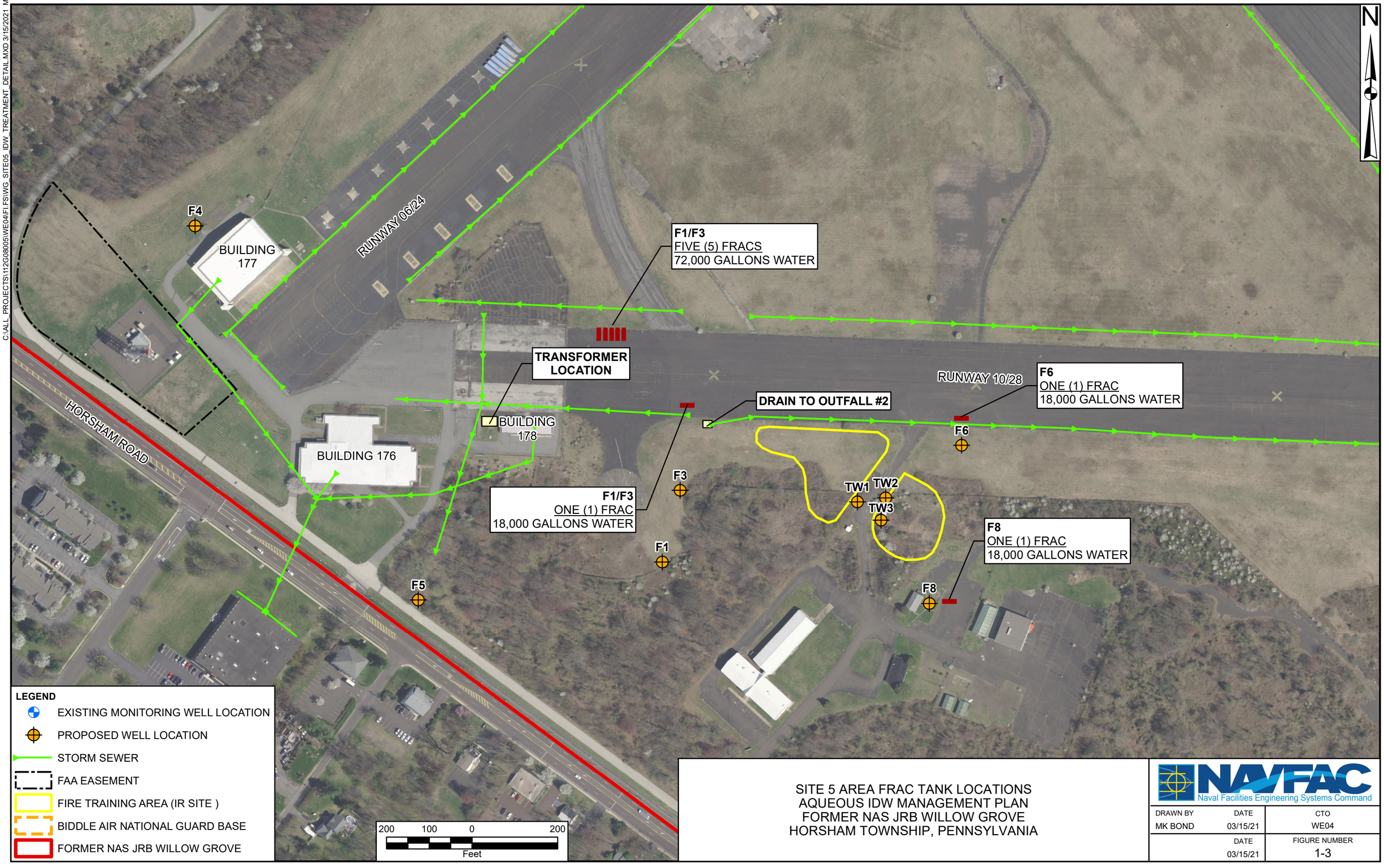

SITE 5 AREA FRAC TANK LOCATIONS
AQUEOUS IDW MANAGEMENT PLAN
FORMER NAS JRB WILLOW GROVE
HORSHAM TOWNSHIP, PENNSYLVANIA

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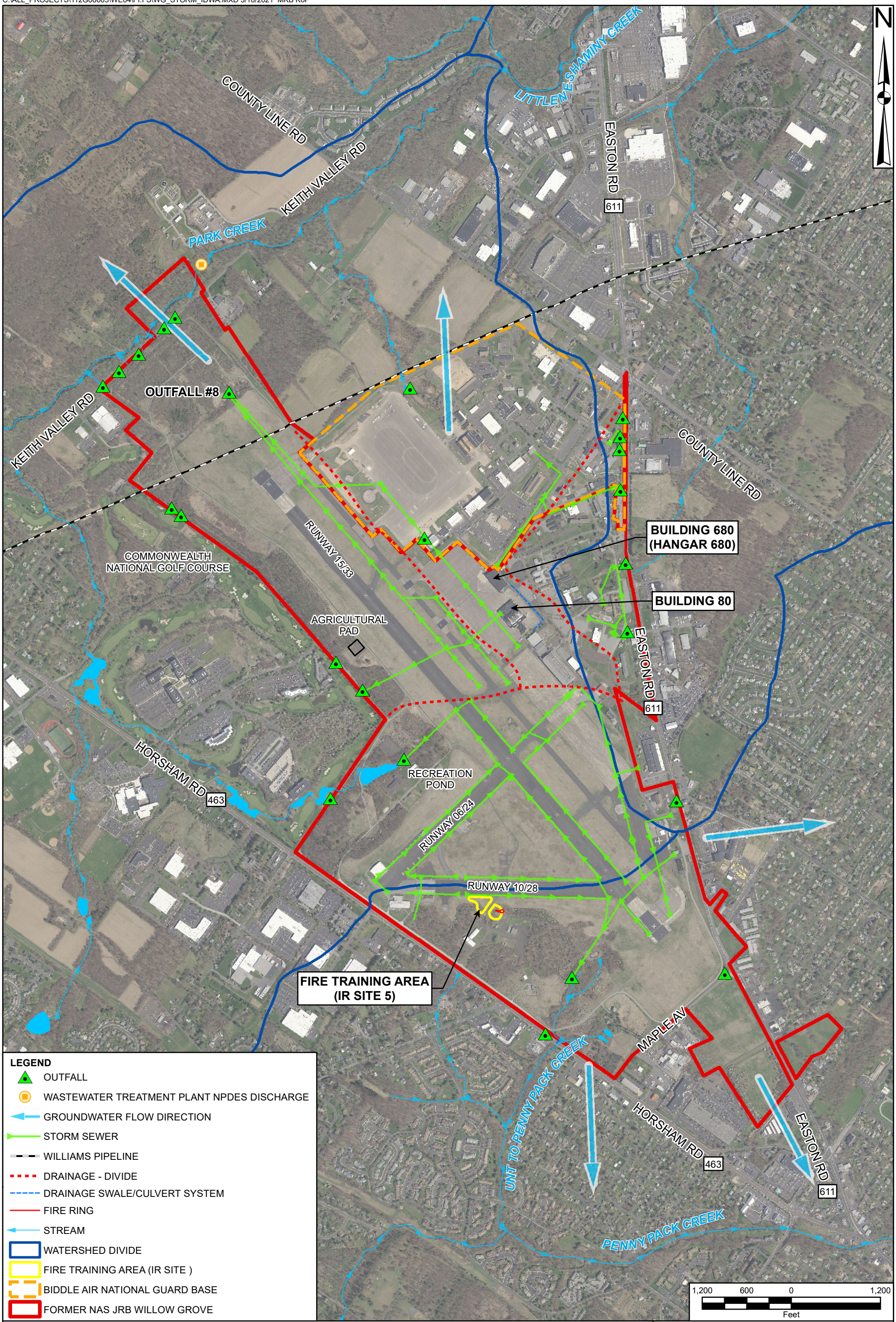

STORM WATER SYSTEM LAYOUT
AQUEOUS IDW MANAGEMENT PLAN
FORMER NAS JRB WILLOW GROVE
HORSHAM TOWNSHIP, PENNSYLVANIA

NAVFAC Naval Facilities Engineering Systems Command

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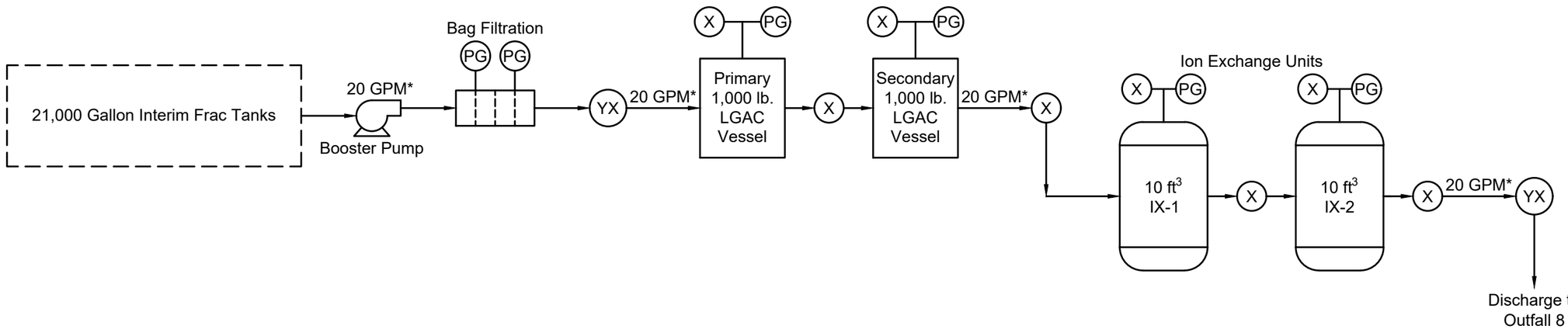

FT	Flow Totalizer
PG	Pressure Gauge
LGAC	Liquid Granular Activated Carbon
IX	Ion Exchange
X	Accessible Port/Valve
Y	Connector Equipped with Check Valves
GPM	Gallons Per Minute
GAL	Gallons
ft^3	Cubic Feet
ft	Feet
lb.	Pound
*	Up To

PROCESS FLOW DIAGRAM
INVESTIGATION DERIVED WASTE TREATMENT SYSTEM
HANGAR 680 BUILDING
FORMER NAS JRB WILLOW GROVE
HORSHAM TOWNSHIP, PENNSYLVANIA

NAVFAC Naval Facilities Engineering Systems Command

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